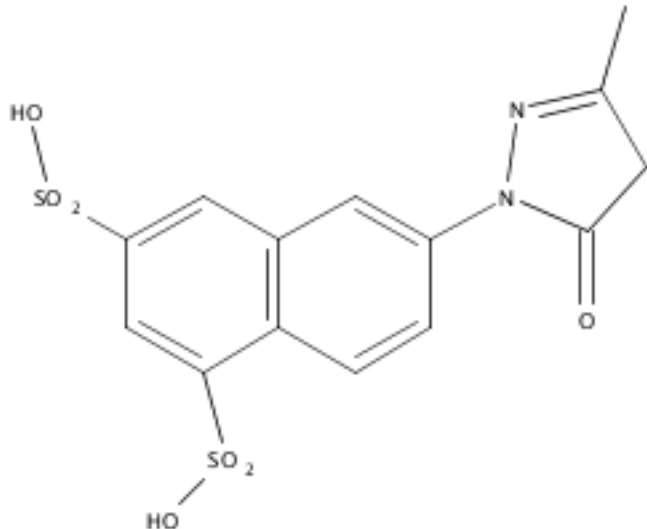


## Task History

Task Began April 27, 2018 06:57 AM

Explore substances by SUBSTRUCTURE ID(7)



Answer Type:	Substances
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Result Count:	71
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Retrieve reference information in 1 substance (ID 8)

From ID:	7
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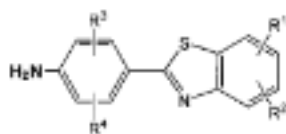
Answer Type:	References
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Result Count:	44
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# 1. Water-soluble azo compound or salt thereof, an ink composition and colored item

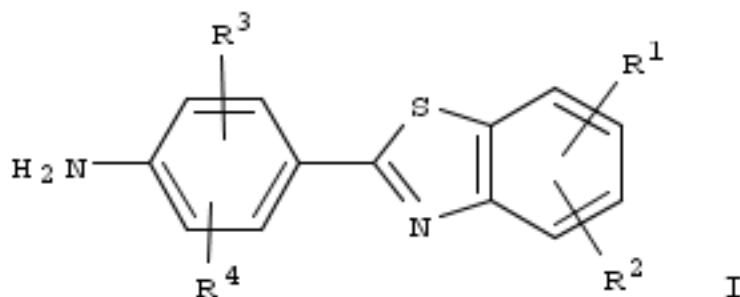
By Kirita, Masao; Masegi, Junya

From [Jpn. Kokai Tokkyo Koho \(2017\), JP 2017002106 A 20170105](#), Language: Japanese, Database: CAPLUS

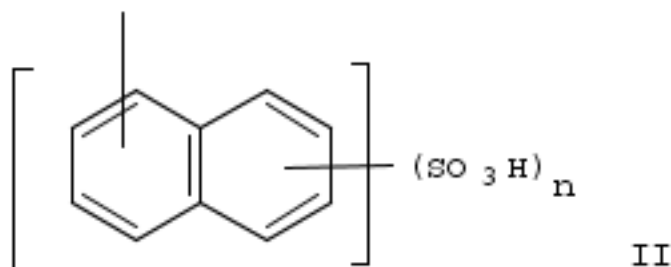


(6)

Provided is a water-sol. yellow dye having excellent water soly., excellent fastness properties, esp. resistance to ozone gas, and an ionic compn. for inkjet recording contg. the same. A water-sol. azo compd. or a salt thereof is obtained by diazotizing a compd. represented by the formula of I and capping it with a pyrazolone compd. having a group represented by the formula II, wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> is independently hydrogen, halogen, carboxy, carbamoyl, sulfo, sulfamoyl, hydroxy, amino, cyano, phospho, nitro, acyl, C<sub>1-4</sub> alkyl (substituted by ≥1 kind of hydroxy, carboxyl, carbamoyl, and sulfo group), C<sub>1-4</sub> alkylthio (substituted by ≥1 kind of hydroxy, carboxyl, carbamoyl, or sulfo group), C<sub>1-4</sub> alkylamino (substituted by ≥1 kind of hydroxy, carboxyl, carbamoyl, or sulfo group), or acylamino group.



I



II

## ~0 Citings

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# 2. Silicone sealants for aluminum alloy doors and windows

By Yang, Yunqi

From [Faming Zhuanli Shenqing \(2016\), CN 105713553 A 20160629](#), Language: Chinese, Database: CAPLUS

The sealants are prepd. from cyclotetradimethylsiloxane, 5-ethoxycarbonyl-4,6-dimethyl-2-pyranone, 4-methyl-2-oxo-pentanoic acid sodium salt, methyltrimethoxysilane, 3-oxo-nortropane-8-carboxylic acid Et ester, o-methoxyacetophenone, tri-tert-butoxyvinylsilane, 1,1-dimethoxyethane, 2-[(dimethoxysulfophosphonyl)thio]phenylacetic acid Et ester. The sealants also comprise 1,1-diethoxyethane, 6-(4,5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl)-1,3-naphthalene disulfonic acid, 3-methoxybutanol. The sealants have good storage stability and flame retardancy.

## ~0 Citings

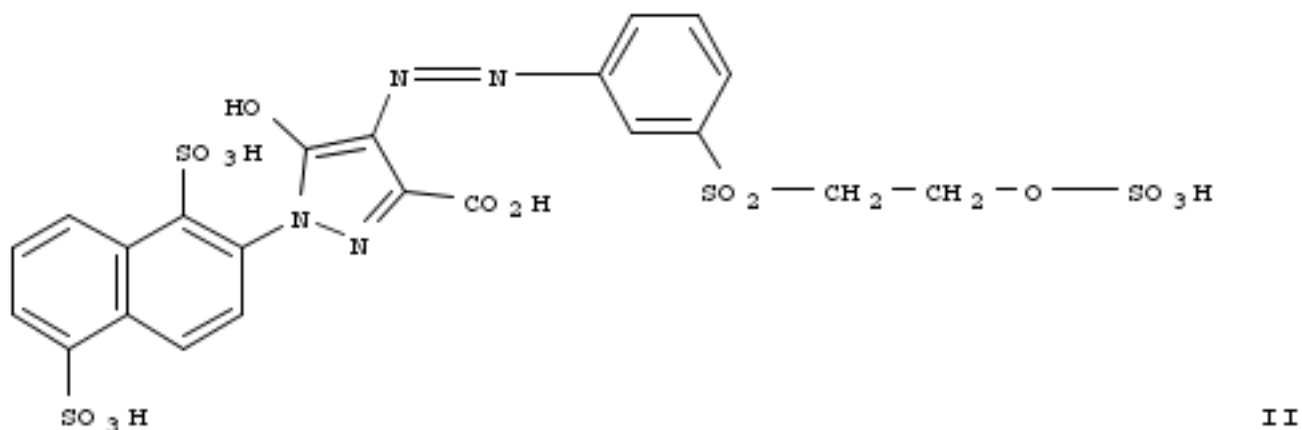
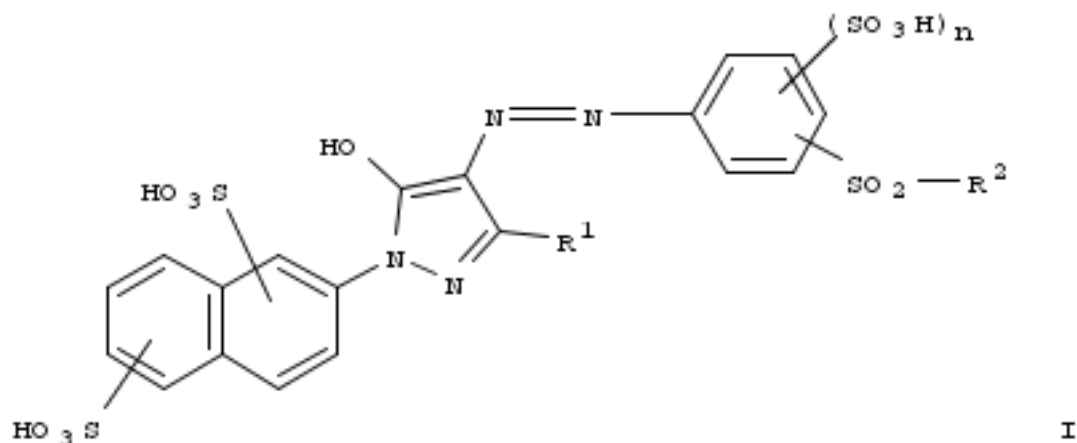
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# 3. Monoazo dyes for dyeing leather

By Vogel, Till; Meier, Stefan; Kiesow, Harald; Kondardi, Helena; Somogyi, Laszlo

From [PCT Int. Appl. \(2010\), WO 2010034832 A1 20100401](#), Language: German, Database: CAPLUS

Monoazo dyes (I) ( $n = 0 - 2$ ,  $R^1 = H$ ,  $C_{1-4}$  alkyl,  $COOH$ ,  $C_{1-4}$ -alkoxycarbonyl or  $CN$ ,  $R^2 = CH:CH_2$  or  $CH-CH_2Q$ ) and their salts can be used for dyeing leather and impart a yellow tint with excellent fastness to leather. Thus, an yellow azo dye (II) prepd. by reacting 1-(1,5-disulfonaphthalene-2-yl)-5-hydroxy-1H-pyrazol-3-carboxylic acid (coupling component, prepd. from 2-amino-1,5-disulfonaphthalene and acetylsuccinic acid di-Me ester) with 3-(2-hydroxysulfonylethyl)sulfonylaniline (diazo component) at pH 4.5 - 5 was used for dyeing leather at pH 7.2 and 30°.



~0 Citings

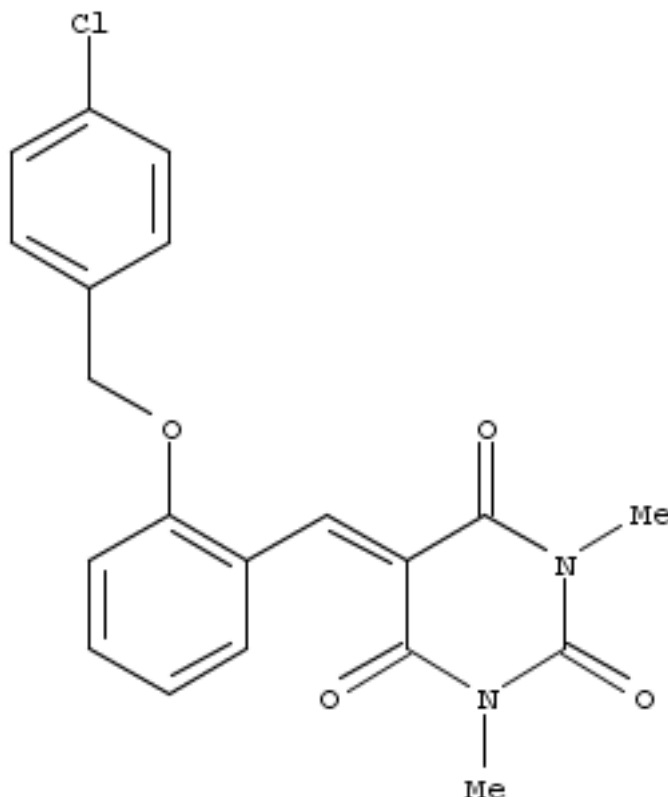
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#### 4. Methods and compositions using siRNA, small molecules, and other agents for targeting c-rel, and therapeutic and other uses

By Liou, Hsiou-Chi; Tian, Wenzhi; Cheng, Shuhua; Hsia, Constance Y.; Owyang, Alex; Hsu, Jason J.

From [PCT Int. Appl. \(2007\), WO 2007120842 A2 20071025](#), Language: English, Database: CAPLUS

The invention relates to compns. and methods for targeting c-Rel. In particular, the invention provides compns. and methods for treating cancers, inflammatory diseases, autoimmune diseases, and transplant rejection by inhibiting c-Rel activity and for regulating c-Rel for research and drug screening applications. Compds. of the invention include e.g. small mols. and siRNA mols.



~5 Citings

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### 5. Trisazo dye compounds for use in colored polarizing films

By Kashiwano, Yutaka; Taguma, Akihiro; Hayashi, Shigetoshi

From [Jpn. Kokai Tokkyo Koho \(2001\)](#), [JP 2001108828 A 20010420](#), Language: Japanese, Database: CAPLUS

The compds. are of AN=NXN=NYN=NB (A = sulfo group- or COOH group-contg. Ph, or sulfo group-contg. naphthyl; B = pyrazolyl group bearing monosulfophenyl or sulfonaphthyl group, OH group and Me or COOH group; X, Y = optionally substituted phenylene groups) or its salts. Thus, coupling a diazotized 3-[[4-[(4-amino-2-methylphenyl)azo]phenyl]azo]naphthalene-5,7-disulfonic acid di-Na salt with 3-(5-hydroxy-3-methyl-1-pyrazolyl)benzenesulfonic acid gave a dye which was used at 0.025% in an aq. soln. also contg. other dyeing aids to give a coating for applying on a polarizing film substrate from Vinyon 7500 (PVA).

~1 Citing

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### 6. Light-sensitive silver halide photographic material

By Kawashima, Yasuhiko; Kagawa, Nobuaki; Yamauchi, Reiko; Kojima, Tamotsu

From [Eur. Pat. Appl. \(1992\)](#), [EP 476928 A1 19920325](#), Language: English, Database: CAPLUS

A water-sol. light absorbing oxonol dye I (R,R<sup>2</sup> = H, alkyl, aryl, alkenyl, heterocycle; Z,Z<sup>1</sup> = group of non-metallic atoms necessary to form an arom. heterocyclic ring; n = 0, 1, 2) can be used as a filter-, antihalation-, or anti-irradn. dye in photog. film. I are photog. inactive, can be decolorized easily, or be eluted with H<sub>2</sub>O during development-processing step.

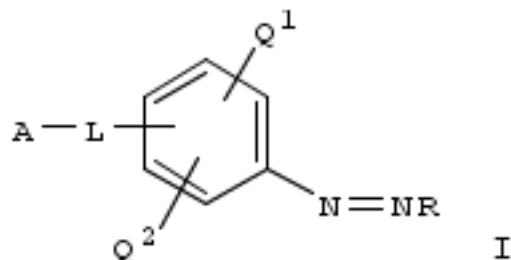
~0 Citings

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### 7. Silver halide photographic materials containing new colored cyan coupler

By Langen, Hans; Huebner, Dirk; Renner, Guenter; Schuetz, Heinz Dieter; Ranz, Erwin  
 From [Ger. Offen. \(1991\), DE 4004039 A1 19910814](#), Language: German, Database: CAPLUS

The photog. material contains  $\geq 1$  photosensitive Ag halide emulsion layer contg. a colorless cyan coupler, a development inhibitor-releasing compd. having released inhibitor diffusibility ( $D_f \geq 0.4$ ), and a color cyan coupler I (A = cyan coupler residue with coupling end bonded to L; L = a divalent moiety;  $Q^1, Q^2 = H$ , or photog. inert substituent; R = coupler component to give I as a yellow dye). The Ag halide emulsion layer is red-sensitive. The photog. material also contains  $\geq 1$  green-sensitive Ag halide emulsion layer contg. a magenta coupler. The photog. material has swell factor  $\leq 3.5$  in water at  $10^\circ$ .



~1 Citing

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## 8. Pyrazolone photographic dyes as halation and irradiation inhibitors.

By Tanaka, Akira; Kaneko, Satoshi; Sumioka, Koichi  
 From [Jpn. Kokai Tokkyo Koho \(1991\), JP 03127053 A 19910530](#), Language: Japanese, Database: CAPLUS

Title dyes I (Y = benzene or naphthalene ring; Z = 4-7-membered cycloalkane ring;  $R^1 = \text{alkyl}$ ;  $R^2 = \text{sulfoalkoxy}$ , sulfoalkylamino;  $R^3 = \text{alkyl, aryl, carboxy, alkoxy carbonyl}$ ;  $n = 1, 2$ ;  $\geq 3$  sulfo groups are in the mol) have good photog. characteristics and are easily removed in processing. Thus, a gelatin soln. contg. a hardening agent, a surfactant, and dye II was applied on a polyester base to obtain a colored film strip with d. 1.90 at max. absorption wavelength. The strip was immersed in  $30^\circ$  D-72 developer for 5 s and rinsed in running water for 10 s. The strip was completely decolored.

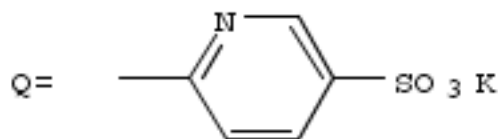
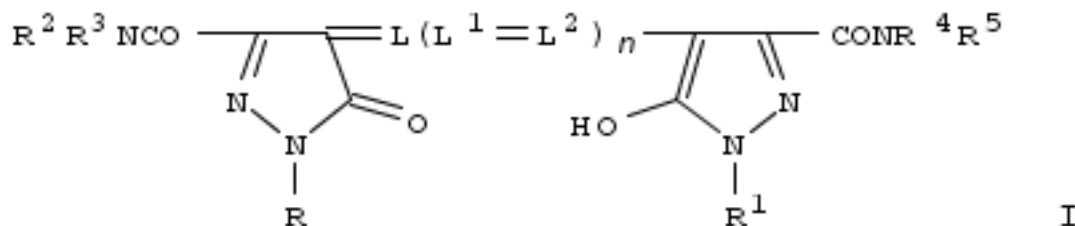
~0 Citings

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## 9. Silver halide photographic materials containing oxonol dyes for halation and irradiation prevention

By Kawashima, Yasuhiko; Tanaka, Mari; Kojima, Tamotsu; Kagawa, Nobuaki  
 From [Jpn. Kokai Tokkyo Koho \(1990\), JP 02093534 A 19900404](#), Language: Japanese, Database: CAPLUS

The material contains a water-sol. oxonol dye I ( $R, R^1 = H, \text{alkyl, aryl, alkenyl}$ ;  $R^{2-5} = H, \text{alkyl, aryl, alkenyl, heterocycle}$ ;  $\geq 1$  of  $R^{2-5}$  is heterocycle;  $R^2$  and  $R^3, R^4$  and  $R^5$  may form heterocycle;  $R, R^{1-6}$  may be substituted,  $\geq 1$  of the  $R, R^{1-5}$  has water-sol. group;  $L, L^1, L^2 = (\text{un})\text{substituted methine}$ ;  $n = 0, 1, 2$ ). The dye is easily washed out during processing and leaves little color stain on the processed material. Thus, a multilayer chromogenic color paper prepd. by incorporating compd. I ( $R = R^1 = \text{Me}$ ;  $R^2 = R^4 = H$ ;  $R^3 = R^5 = Q$ ;  $L = L^1 = L^2 = \text{CH}$ ;  $n = 2$ ) into the red-sensitive layer and the adjacent interlayer, showed fogging and staining resistance at the unexposed parts.



## ~0 Citings

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**10. Recording fluids for ink-jet printing**

By Takimoto, Hiroshi; Sano, Hideo

From [Jpn. Kokai Tokkyo Koho \(1990\)](#), [JP 02080470 A 19900320](#), Language: Japanese, Database: CAPLUS

Storage-stable title liqs. with good soly., forming high-d. prints with excellent light and water resistance, comprise aq. medium, polyethyleneimine (I), and  $\geq 1$  metal complex dye selected from azo dye II [X, Y = H, SO<sub>3</sub>M, halo, Me, MeO, EtO, NO<sub>2</sub>, NHAc; L = Cu, Co; Z = (un)substituted Ph or naphthyl; W = Me, CO<sub>2</sub>M, alkoxycarbonyl; M = alkali metal, ammonium, amine salt], azo dye III [Q<sup>1-2</sup> = (un)substituted benzene or naphthalene ring], and IV [A, B = (un)substituted Ph or naphthyl; R = H, Me, MeO, EtO, Cl, NHAc; n = 0, 1]. Thus, a typical ink contained ethylene glycol monoallyl ether 25, ethylene glycol 22, I (mol. wt. 50,000) 2, and Cu complex dye V 2% in water.

## ~3 Citings

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**11. Impermeant potential-sensitive oxonol dyes: II. The dependence of the absorption signal on the length of alkyl substituents attached to the dye**

By Nyirjesy, P.; George, E. B.; Gupta, R. K.; Basson, M.; Pratap, P. R.; Freedman, J. C.; Raman, K.; Waggoner, A. S.

From [Journal of Membrane Biology \(1988\)](#), [105\(1\)](#), 45-53. Language: English, Database: CAPLUS, DOI:10.1007/BF01871105

The potential-dependent light absorption changes of 43 impermeant oxonol dyes was measured with an oxidized cholesterol bilayer lipid membrane system. The size of the signal is strongly dependent on the chain length of alkyl groups attached to the chromophore. Dye mols. with intermediate chain lengths give the largest signals. To better understand the dependence of the absorbance signal on alkyl chain length, a simple equil. thermodyn. anal. has been derived. The anal. uses the free energy of dye binding to the membrane and the on-off model (George, E. B. et al., 1988) for the potential-sensing mechanism. In this model, a population of dye mols. in nonpolar membrane binding sites is in a potential-dependent equil. with a second population of dye that resides in an unstirred layer adjacent to the membrane. Dye in the unstirred layer is in a sep. equil. with dye in the bulk bathing soln. The equil. binding theory predicts a sigmoidally shaped increase in signal with increasing alkyl chain length, even for very nonpolar dyes. Apparently, aggregation of the more hydrophobic dyes in the membrane bathing soln. may be responsible for their low signals, which are not predicted by the theory.

## ~0 Citings

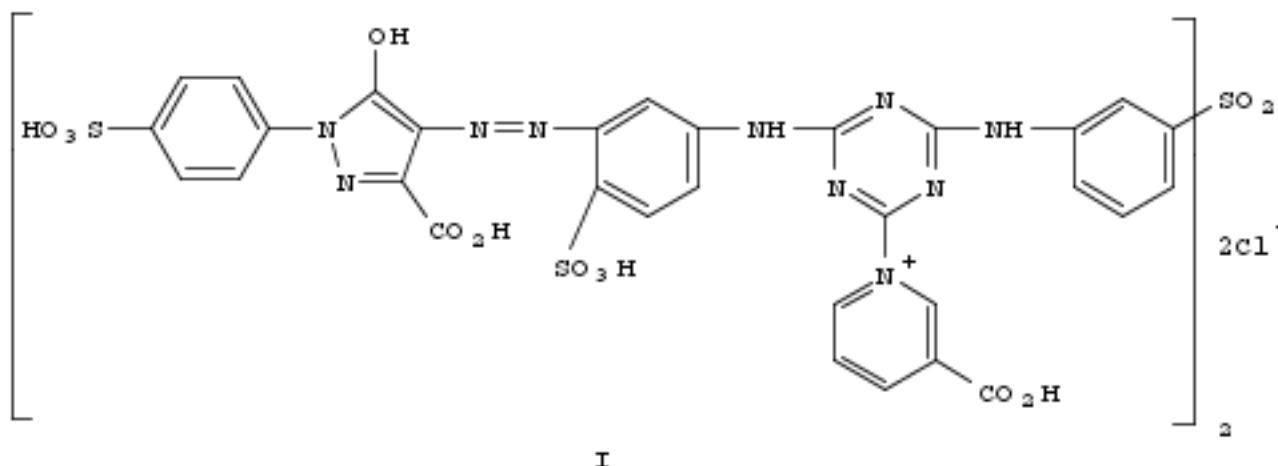
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**12. Reactive disazo dyes**

By Yamamura, Shigeo; Kojima, Masayoshi

From [Jpn. Kokai Tokkyo Koho \(1987\)](#), [JP 62010168 A 19870119](#), Language: Japanese, Database: CAPLUS

The yellow to greenish yellow multifunctional title dyes with excellent buildup properties and heat resistance, suitable for dyeing cellulosic fibers in one-bath-one-step dyeing of cellulose-polyester blends, were prepd. and contain 2 pyrazolone groups and 2 s-triazine rings. Thus, cyanuric chloride was condensed with 2,4-diaminobenzenesulfonic acid, and the condensate was diazotized, coupled with 1-(4-sulfophenyl)-5-hydroxypyrazole-3-carboxylic acid, condensed with 3,3'-diaminodiphenyl sulfone, and treated with nicotinic acid to give I, greenish yellow on cotton.



~0 Citings

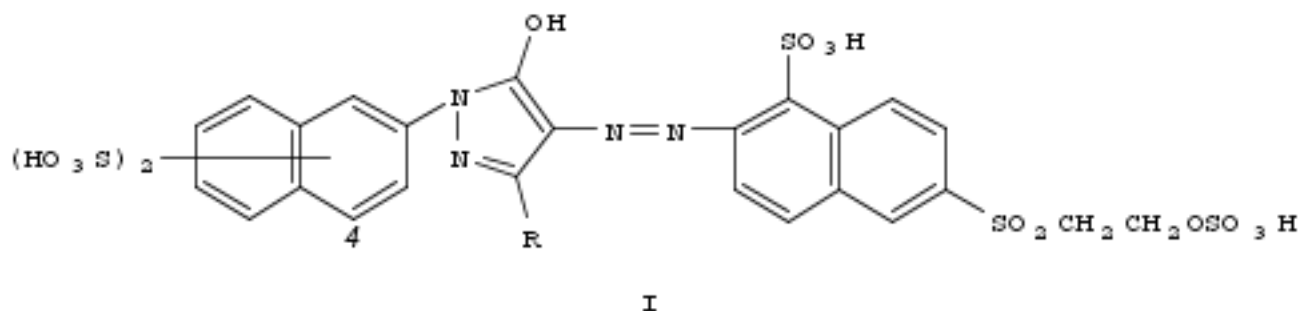
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### 13. Reactive azo dyes for cellulosic fibers

No Inventor data available

From [Jpn. Kokai Tokkyo Koho \(1983\), JP 58160360 A 19830922](#), Language: Japanese, Database: CAPLUS

The title dyes are represented by the general formula I (R = Me, carboxyl, carboxyethyl). They produce deep greenish yellow shades when applied to cellulosic fibers. Thus, 2,1,6- $\text{H}_2\text{N}(\text{HO}_3\text{S})\text{C}_{10}\text{H}_5\text{SO}_2\text{CH}_2\text{CH}_2\text{OSO}_3\text{H}$  [81417-89-2] was diazotized and coupled with 3-methyl-1-(4,8-disulfo-2-naphthyl)-5-pyrazolone [6838-01-3] in aq. medium at pH 5-6 to give I (R = Me; 4,8-disulfo) [89049-97-8], which exhibited excellent CI fastness on cotton. Six other I were similarly prepd.



~1 Citing

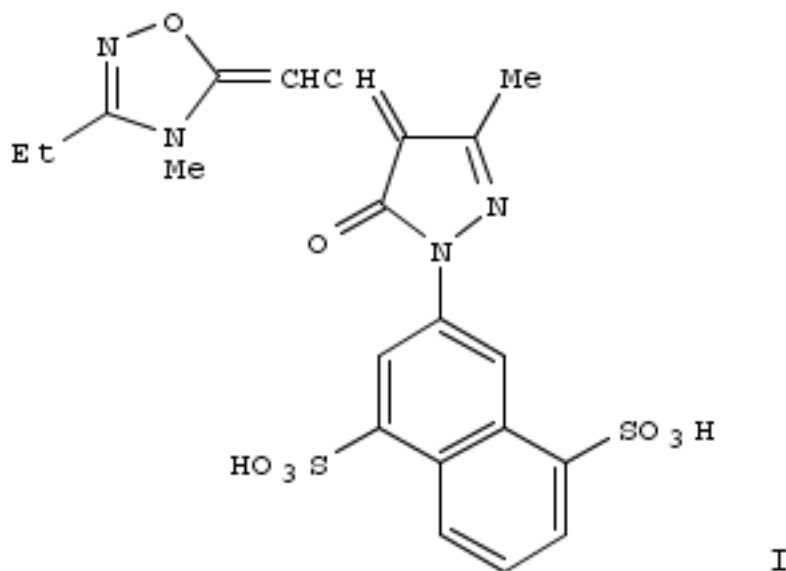
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### 14. Photographic recording material and merocyanines

By Oehlschlaeger, Hans; Langen, Hans

From [Ger. Offen. \(1981\), DE 3017069 A1 19811105](#), Language: German, Database: CAPLUS

Water-sol. merocyanine dyes for use in antihalation or filter layers of photog. materials are described. The dyes, which contain the 1,2,4-oxadiazolyl and 5-pyrazolonyl moieties, can be readily decolorized and have no adverse effects on the photog. properties of the materials. Thus, a mordant (Ger. 2,928,184.3; polymer 7) 16.8 mL and I 450 mg were added to a 10% gelatin soln. 50 mL. This soln. was then dild. to 150 mL and, after addn. of a saponin soln. 5 mL at pH 5.8, coated on a cellulose acetate support to give a 2.0-2.5  $\mu$  filter layer. After addn. of a protective layer to this filter layer, the material was then immersed for 16 h in flowing water to show no change in d. The material was then readily decolorized in a color photog. development process.



~0 Citings

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### 15. Photosensitive recording material with a colored layer

By Helling, Guenter; Oehlschlaeger, Hans; Himmelmann, Wolfgang; Beck, Manfred  
 From [Ger. Offen. \(1981\), DE 2941819 A1 19810430](#), Language: German, Database: CAPLUS

Polymeric mordants contg.  $\geq 10\%$  of self repeating units of the formula  $\text{CH}_2\text{CR}^4(\text{CO}_2\text{CH}_2\text{CH}:\text{CHCH}_2\text{Z}+\text{R}^1\text{R}^2\text{R}^3)\text{X}^-$  ( $\text{R}^1, \text{R}^2, \text{R}^3$  = alkyl, a carbocyclic group, or 2 of these together form a heterocycle;  $\text{R}^4$  = H, alkyl;  $\text{Z}$  = N or P;  $\text{X}^-$  = anion), which are mordants for acid dyes, are described for use in prepg. photog. antihalation and filter layers. These polymers are photog. inert and have no undesirable effects on the photog. material. Thus, a trimethylamine-quaternized 4-chlorobutenyl methacrylate-divinylbenzene-styrene copolymer latex (8.5% solids) was prepd. and 16.2 mL of this latex added to a 10% aq. gelatin soln. at  $40^\circ$ . Water 100 mL was added, a soln. of I 450 mg in water 50 mL added, and the mixt. then coated on a cellulose acetate support and dried to give a filter layer that retained 83% of its d. when washed with water for 16 h.

~5 Citings

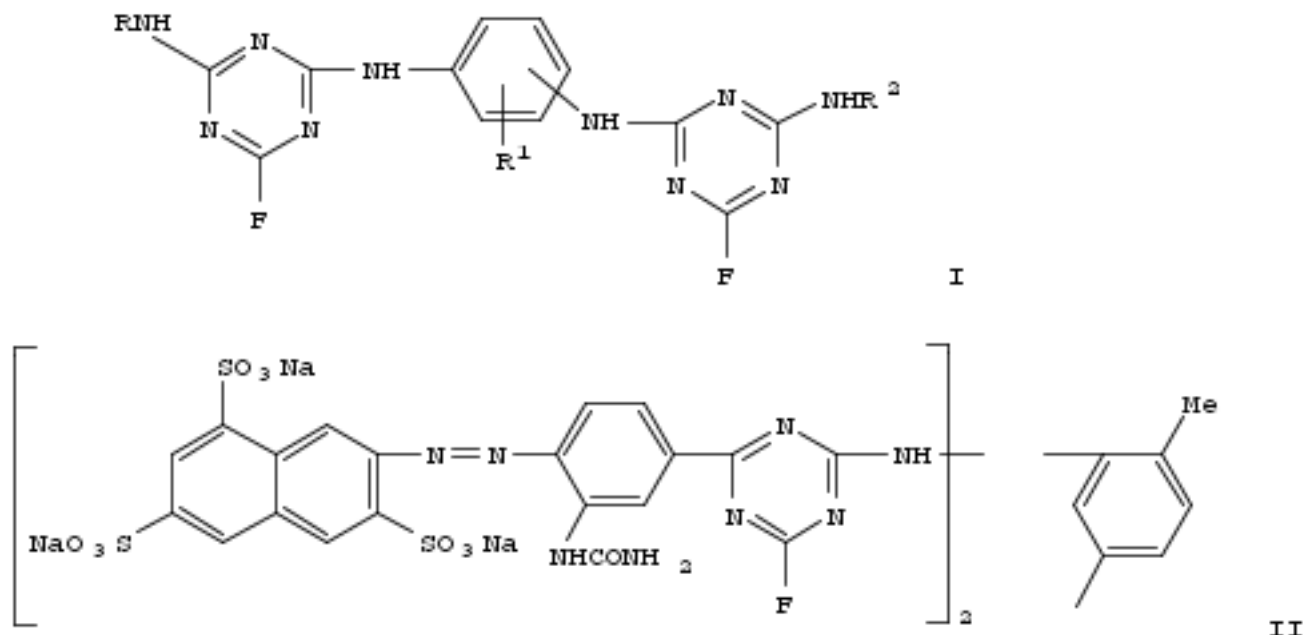
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### 16. Fiber-reactive dyes

By Seiler, Herbert; Hegar, Gert  
 From [Ger. Offen. \(1976\), DE 2611550 A1 19760930](#), Language: German, Database: CAPLUS

Fiber-reactive dyes (I, R = azo chromophore;  $\text{R}^1$  = Me,  $\text{SO}_3\text{H}$ ;  $\text{R}^2$  = azo chromophore, anthraquinone chromophore, o-MeC<sub>6</sub>H<sub>4</sub>, o-HO<sub>3</sub>SC<sub>6</sub>H<sub>4</sub>) were prepd. and used to dye cotton to fast yellow to blue shades. For example, II [60958-53-4] was prepd. by conventional syntheses and dyed cotton a golden yellow shade.





~4 Citings

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**17. Yellow monoazo dyes**

By Ikeda, Takuo; Yamamoto, Masakazu; Matsumoto, Onpei; Okuno, Masami

From *Jpn. Tokkyo Koho* (1973), JP 48023175 B 19730711, Language: Japanese, Database: CAPLUS

Fiber-reactive azo dyes (I, R = CH<sub>2</sub>:CH, HO<sub>3</sub>SOCH<sub>2</sub>CH<sub>2</sub>; R<sub>1</sub> = H, alkyl; R<sub>2</sub> = H, alkoxy, at least one R<sub>1</sub> or R<sub>2</sub>.neq. H) were prep'd. and were used to dye cellulosic fibers fast, brilliant yellow shades. Thus, 2,4,5-Me(H<sub>2</sub>N)(MeO)C<sub>6</sub>H<sub>2</sub>SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O<sub>3</sub>H was diazotized and coupled with 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone to give azo dye I (R = 4-HO<sub>3</sub>SOCH<sub>2</sub>CH<sub>2</sub>, R<sub>1</sub> = 5-Me, R<sub>2</sub> = 2-MeO) [ 51023-89-3 ], reddish yellow on cotton. The other I were similarly prep'd.

~0 Citings

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**18. Photographic direct-positive silver emulsions for the solarization process**

By Furuya, Tetsuo; Ishikawa, Hidehiko; Kanisawa, Hideo

From *Ger. Offen.* (1973), DE 2322275 A1 19731122, Language: German, Database: CAPLUS

Highly sensitive photog. direct-pos. Ag halide emulsions for the solarization process and protected against darkroom safelight contain a Rh salt and, in ≥1 layer, 25-150 mg pyrazolone, anthraquinone, or triphenylmethane dye/100 cm<sup>2</sup> with absorption max. at 590-690 nm. Thus, an emulsion prep'd. with gelatin 28, KBr 34, KI 0.7, AgNO<sub>3</sub> 48 g, 510 ml H<sub>2</sub>O, 1.5 ml soln. of 0.1 g RhCl<sub>3</sub>.4H<sub>2</sub>O/100 ml 25% NaCl soln., NH<sub>4</sub>OH, a reducing agent, a Au salt, 3,3',9-triethyloxacarbocyanine iodide (I) as sensitizer, a hardening agent, and a surfactant was coated on a transparent support, overcoated with a protective layer having 30 mg Kayaku Alizarine Blue HRL (II)/100 cm<sup>2</sup>, and dried. The film of relative reversal sensitivity (RRS) 95 was exposed to a darkroom safelight with red filter and had a d. 4.00 after 0 min and 3.65 after 20 min exposure vs. 4.01 and 2.05, resp., for a I- and II-free film of RRS 100.

~0 Citings

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**19. Fiber-reactive dyes**

By Bien, Hans Samuel; Harms, Wolfgang

From *Ger. Offen.* (1972), DE 2114158 A 19720928, Language: German, Database: CAPLUS

Fiber-reactive dyes of structure  $\text{XNHCON(R1)(CH}_2\text{)}_n\text{N(R2)Y}$  (I) were prep'd. and used to dye cellulose and wool light- and wetfast shades. In structure I, X is an azo, disazo, anthraquinone, Cu phthalocyanine, or azo metal complex chromophoric group,  $\text{R1} = \text{H}$  or  $\text{Me}$ ,  $n = 2$  or  $3$ ,  $\text{R2} = \text{H}$ ,  $\text{Me}$ ,  $\text{CH}_2\text{CH}_2\text{OH}$ , or  $\text{CH}_2\text{CH}_2\text{OSO}_3\text{H}$ , and  $\text{Y} = \text{Q(R3} = \text{H, Cl, F, NO}_2, \text{R4} = \text{H, Cl, F, R5} = \text{F, Cl), Q1, or Q2}$ . Thus, 4,3-Me(O<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>NH<sub>2</sub> was treated with PhO<sub>2</sub>CCl and the intermediate treated with H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> to give 4,3-Me(O<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>NHCONHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> which was reduced with Raney Ni-H<sub>2</sub>NNH<sub>2</sub> to give 4,3-Me(H<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>NHCONHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> (II). II was diazotized and coupled with 1,3,8-HOC<sub>10</sub>H<sub>5</sub>(SO<sub>3</sub>H)<sub>2</sub> and the azo intermediate condensed with 2,4,6-trifluoro-5-chloropyrimidine (III) to give azo dye IV [37717-41-2], which dyed cotton hanks a light- and wetfast scarlet shade. Anthraquinone dye (V) [37717-42-3] was prep'd. by treating 1-amino-4-(3-aminoanilino)anthraquinone-2,4'-disulfonic acid with PhO<sub>2</sub>CCl and treating the intermediate with MeNHCH<sub>2</sub>CH<sub>2</sub>NHMe followed by III. Forty other I were similarly prep'd.

#### ~1 Citing

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### 20. 4-Aminopyrazolones. I. Properties of 1-substituted 3-methyl-4-aminopyrazolones

By Khaikin, M. S.; Shamil'skaya, D. B.; Levkoev, I. I.; Kukhtin, V. A.

From [Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii \(1966\), 11\(1\), 12-13](#). Language: Russian, Database: CAPLUS

The properties of several new compds. of 4-amino-5-pyrazolones were studied, where R is H, an alkyl, cycloalkyl, aralkyl, or aryl. The developing properties were det'd. by a method described by M. S. Khaikin, et al. (CA 57, 4225i) in a developer contg. 1/40 mole developing substance, 25 g. anhyd. Na<sub>2</sub>SO<sub>3</sub>, and H<sub>2</sub>O to make 1000 ml. Image traces are obtained at pH 5. The development is active and highly selective at pH 6.5-8. At a further increase in pH the fog d. increases considerably. Introduction of substituents in the phenyl group of 1-phenyl-3-methyl-4-amino-5-pyrazolone reduces the development rate in most cases, esp. in sulfo derivs. Electropos. substituents, e.g. the methyl or methoxy group, reduce the selectivity of development. The selectivity is increased with the addn. of Cl atoms to the phenyl group, esp. in 1-(2-chlorophenyl)-3-methyl-4-amino-5-pyrazolone. The electron character of the substituents exerts a considerable influence on the developing properties. Substitution of the Me group in position 3 of 1-phenyl-4-amino-5-pyrazolones by a carbalkoxymethyl or esp. by a carbalkoxy group considerably reduces the development rate at pH 7-7.5. 3-Methyl-4-amino-5-pyrazolones develop on the Amidol level. Some compds. of this series, esp. 1-phenyl and 1-chlorophenyl derivs., surpass Amidol in selectivity and are not inferior in development rate.

#### ~0 Citings

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### 21. Copperized azo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1965\), CH 386593 19650415](#), Language: Unavailable, Database: CAPLUS

The aminoazo comp'd. (27 parts), obtained by coupling diazotized 2,5-H<sub>2</sub>N(O<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>H with 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone (I) and reducing the NO<sub>2</sub> group, was treated at 70-80° with 25% ammoniacal CuSO<sub>4</sub> soln., the Cu complex salted, filtered, dissolved in warm H<sub>2</sub>O 300, NaOAc 27 and PhCl 20 parts added, the mixt. heated to 80-5°, finely powd. p-C<sub>6</sub>H<sub>4</sub>(COCl)<sub>2</sub> added gradually during 1 hr. until no amino comp'd. remained, the bisamide salted, filtered, washed, and dried to a brown powder which dyed cotton and regenerated cellulose yellowish orange. A similar dye was prep'd. by replacing I with the 6-sulfo analog.

#### ~0 Citings

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### 22. Reactive dyes

No Inventor data available

From [No Corporate Source data available \(1963\), BE 627437 19630723](#), Language: Unavailable, Database: CAPLUS

Compds. of the general formula I, where R is Me, Et, or NMe<sub>2</sub>, and A is the residue of an azo, anthraquinone, or phthalocyanine dye, dye cotton when applied with an acid binder. Thus, II (R = Me, X = H, Y = NH<sub>2</sub>) (III) 32.9 was diazotized and coupled with 1-(2,5-disulfophenyl)-3-methyl-5-pyrazolone 35 parts to give a H<sub>2</sub>O-sol. yellow powder, which dyed cotton yellow. Similarly, other dyes were prep'd. from II (R, X, Y, other reactants, and color given): NMe<sub>2</sub>, SO<sub>3</sub>H, NH<sub>2</sub> (IV), 1,4,6-HOC<sub>10</sub>H<sub>5</sub>(SO<sub>3</sub>H)<sub>2</sub>, scarlet; Me, COCl, H (V), Cu complex of [2,4,6-H<sub>2</sub>N(HO<sub>3</sub>S)<sub>2</sub>C<sub>6</sub>H<sub>2</sub>OH → 1,8,3,6-H<sub>2</sub>N(HO)C<sub>10</sub>H<sub>4</sub>(SO<sub>3</sub>H)<sub>2</sub>], violet; Et, COCl, H (VI), 2,4-(H<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>SO<sub>3</sub>H, 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone, yellow; NMe<sub>2</sub>, H, COCl (VII), 1-amino-4-(4-amino-2-sulfoanilino)-2,6-anthraquinonedisulfonic acid, greenish blue; Me, H, COCl (VIII), [Cu phthalocyanine, ClSO<sub>3</sub>H, SOCl<sub>2</sub>, 3-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHAc, HCl (to deacetylate)] (IX), turquoise; Me, NH<sub>2</sub>, H (X), IX, turquoise. III was prep'd. by Friedel-Crafts condensation of PhF and 3-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Cl (XII), chlorosulfonation with ClSO<sub>3</sub>H, treatment with Na<sub>2</sub>SO<sub>3</sub> and MeI, and redn. of NO<sub>2</sub>; IV from PhF, XII, ClSO<sub>3</sub>H, Me<sub>2</sub>NH, redn., and sulfonation with H<sub>2</sub>SO<sub>4</sub>; V from PhF, 4-MeC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Cl, oxidn. of the Me, ClSO<sub>3</sub>H, treatment with Na<sub>2</sub>SO<sub>3</sub> and MeI, and with SOCl<sub>2</sub>; VI prep'd. as V by using EtI; VII as V by using 3-MeC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Cl (XIII), and Me<sub>2</sub>NH; VIII as V by using XIII; X as III by using 4-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Cl.

### ~0 Citings

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## 23. Water-insoluble monoazo dye

No Inventor data available

From [No Corporate Source data available \(1963\)](#), GB 940037 19631023, Language: Unavailable, Database: CAPLUS

3,4-H<sub>2</sub>N(Cl)C<sub>6</sub>H<sub>3</sub>CONH<sub>2</sub> (17.1 parts) was diazotized, added at 50° to an aq. suspension of 40.6 parts 3,2-HOC<sub>10</sub>H<sub>6</sub>CONHC<sub>6</sub>H<sub>3</sub>(NHBz)Me-4,2 contg. a condensation product from 20 moles ethylene oxide and 1 mole octadecyl alc., and the ppt. filtered and dried to give an orange-red powder, which dyed nitrocellulose lacquers and poly(vinyl chloride) yellowish red shades fast to solvents.

### ~0 Citings

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## 24. Reactive azo dyes

No Inventor data available

From [No Corporate Source data available \(1963\)](#), BE 626645 19630628, Language: Unavailable, Database: CAPLUS

Cf. CA 58, 4672c. Azo dyes contg. a dichloro- or trichloropyrimidylamino group and useful for dyeing cellulose fibers yellow, orange, red, brown, violet, blue, and black shades fast to washing were prep'd. Thus, 17.3 parts 2-HO<sub>3</sub>SC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> was diazotized and coupled with 59.9 parts 2-amino-4-(2-sulfo-5-aminoanilino)-6-(3,6-disulfo-8-hydroxy-1-naphthylamino)-s-triazine 24 parts 2,4,5,6-tetrachloropyrimidine (I) 24 added at 50° in 30 min. while maintaining the soln. neutral with aq. Na<sub>2</sub>CO<sub>3</sub>, salted, the ppt. filtered, and dried to give II [X = H, R = NH<sub>2</sub>, A = 2-sulfo-5-(2,4,5-trichloropyrimidylamino)phenyl], a red powder, red in H<sub>2</sub>O, light- and wetfast red on cotton. Similarly were prep'd. II [X = H, R = OMe, A = 2-sulfo-4-(2,4,5-trichloropyrimidylamino)phenyl], a red powder, red on cellulose; and II (X = 2,4,5-trichloropyrimidylamino, R = anilino, A = 3-sulfoanilino), a red powder, red on cotton. 2,3,5-HO(HO<sub>3</sub>S)<sub>2</sub>C<sub>6</sub>H<sub>2</sub>NH<sub>2</sub> 26.9 → 2-amino-4-[3-(2,5-dichloro-4-pyrimidylamino)anilino]-6-(4,6-disulfo-8-hydroxy-1-naphthylamino)-s-triazine 66.6 treated with CuSO<sub>4</sub> 25 parts gave a black powder, violet in H<sub>2</sub>O, violet on cellulose fibers. 2,6,4,8-H<sub>2</sub>N(AcNH)C<sub>10</sub>H<sub>4</sub>(SO<sub>3</sub>H)<sub>2</sub> 36 → 2-amino-4-(3-sulfoanilino)-6-(3,6-disulfo-8-hydroxy-1-naphthylamino)-s-triazine 58.4 treated with CuSO<sub>4</sub> 25, the AcNH group saponified with 3% NaOH, and treated with I 24 parts gave a black dye, blue on cotton. 2-(3-Amino-4-sulfoanilino)-4-(3-sulfoanilino)-6-(4-sulfoanilino)-s-triazine 60.9 → 2-(2,5,6-trichloropyrimidylamino)-5-naphthol-7-sulfonic acid 42 parts gave a red dye, orange-red on cellulose. 2-(3-Amino-4-sulfoanilino)-4-anilino-6-(2-sulfo-4-aminoanilino)-s-triazine 54.4 treated with I 24, and the condensation product diazotized and coupled with 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone gave a yellow dye, yellow on cotton. 2-(2-Methyl-4-aminophenylazo)naphthalene-4,8-disulfonic acid 42.1 condensed with 2-chloro-4-amino-6-(2-sulfo-5-acetamidoanilino)-s-triazine 18.5, the AcNH group saponified, and treated with I 24 parts gave an orange-yellow dye, yellow on cotton.

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## 25. Reactive dyes

No Inventor data available

From [No Corporate Source data available \(1963\)](#), BE 625941 19630611, Language: Unavailable, Database: CAPLUS

Compds. of the general formula I, where A is the residue of an azo, phthalocyanine (Pc), or anthraquinone dye, R is H or Me, Y is CO or SO<sub>2</sub>, one X is H and the other NO<sub>2</sub>, are cotton dyes. Thus, 2,4-(H<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>SO<sub>3</sub>H 18.8 in H<sub>2</sub>O 400, adjusted to pH 4.5 with NaOAc, was cooled to 0-5°, 2,5-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>COCl (II) 23.1 in Me<sub>2</sub>CO 100 added during 1 hr. while maintaining pH 4.5-5.0 with Na<sub>2</sub>CO<sub>3</sub>, the product salted and filtered, redissolved in H<sub>2</sub>O 300, diazotized and coupled with 1-(2,5-disulfo-phenyl)-3-methyl-5-pyrazolone 33.4 in H<sub>2</sub>O 200 and Na<sub>2</sub>CO<sub>3</sub> 40 parts. The dye was salted, filtered, washed with dil. aq. NaCl, and vacuum-dried to a yellow powder which dyed cotton yellow. Similarly, other dyes were prepd. (reactants and shade given): 2-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>H → 1,8,3,6-H<sub>2</sub>N(HO)C<sub>10</sub>H<sub>4</sub>(SO<sub>3</sub>H)<sub>2</sub>, 3,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>COCl, red; [Cu complex of 1,2,3, 5-H<sub>2</sub>N(HO)C<sub>6</sub>H<sub>2</sub>(SO<sub>3</sub>H)<sub>2</sub> → 1,6,3-HO(H<sub>2</sub>N)C<sub>10</sub>H<sub>5</sub>SO<sub>3</sub>H], II, ruby-red; 2,1,5-H<sub>2</sub>NC<sub>10</sub>H<sub>5</sub>(SO<sub>3</sub>H)<sub>2</sub> → [2,5,7-MeNH(HO)C<sub>10</sub>H<sub>5</sub>SO<sub>3</sub>H, 3,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>SO<sub>2</sub>Cl (III)], orange; 3-[3,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>SO<sub>2</sub>NHSO<sub>2</sub>]C<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> (IV) → 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone, yellow; Cu Pc(SO<sub>2</sub>NHC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub>H-3)(SO<sub>2</sub>X)<sub>2-3</sub> (X = in part, NH<sub>2</sub>, ONa, or ONH<sub>4</sub>) (V), 2,5-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>SO<sub>2</sub>Cl, turquoise; 1-amino-4-(4-amino-3-sulfoanilino)-2,6-anthraquinonedisulfonic acid, II, blue. IV was obtained from III and 3-AcNHC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub>, followed by sapon.; V by treating CuPc with ClSO<sub>3</sub>H and SOCl<sub>2</sub>, then 3-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHAc, and sapon. the Ac group.

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## 26. Triazine disazo dyes

No Inventor data available

From [No Corporate Source data available \(1961\)](#), GB 883550 19611129, Language: Unavailable, Database: CAPLUS

A series of new triazine disazo dyes of the general formula I was prepd.; in this formula Y<sub>1</sub>OH and Y<sub>2</sub>OH each represents the residue of a coupling component at least 1 of which contains a solubilizing substituent. Thus, 2,4-(H<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>-SO<sub>3</sub>H (II) 18.8 in H<sub>2</sub>O 300 (adjusted to pH 7) was added to cyanuric chloride (III) 18.6 in Me<sub>2</sub>CO 50 and H<sub>2</sub>O 200 below 5°, diazotized, coupled at 0-10° with barbituric acid (IV) 12.8, Na<sub>2</sub>CO<sub>3</sub> 20, and NaOH 4 in H<sub>2</sub>O 300, adjusted to pH 6.5, treated with a neutral soln. of II 18.8 in H<sub>2</sub>O 200, heated to 40°, kept at pH 6.5 by the dropwise addn. of an aq. soln. of NaOH 4, and cooled after 4 hrs. to 20°. The resulting monoazotriazine dye was diazotized with NANO<sub>2</sub> in H<sub>2</sub>O 200 and 30% 1-C<sub>10</sub>H<sub>7</sub>SO<sub>3</sub>H 70, coupled after 4 hrs. with 1,8,3,6-AcNH(HO)C<sub>10</sub>H<sub>4</sub>(SO<sub>3</sub>H)<sub>2</sub> (V) 36.1 parts, and filtered after 24 hrs. to give a dye which dyes cellulose fibers by the pad dyeing process fast scarlet shades. Similarly, other dyes were prepd. (HOY<sub>1</sub>H, HOY<sub>2</sub>H, shade given): V, 1-(2,5-dichloro-4-sulfo-phenyl)-3-methyl-5-pyrazolone (VI), scarlet; IV, VI, greenish yellow; 1-PrCONH analog of V, 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone, scarlet; 2,5,7-H<sub>2</sub>NCONH(HO)C<sub>10</sub>H<sub>5</sub>SO<sub>3</sub>H, VI, orangeyellow; VI, VI, greenish yellow; 1-PhCH<sub>2</sub>NH analog of V, 2,4-Me<sub>2</sub>C<sub>2</sub>H<sub>3</sub>OH, scarlet. III 18.6 was condensed first with 1,7,8,3,6 - BzNH[4,2 - H<sub>2</sub>N(HO<sub>3</sub>S)C<sub>6</sub>H<sub>3</sub>N:N](HO)C<sub>10</sub>H<sub>3</sub>(SO<sub>3</sub>H)<sub>2</sub> (violet) 62.2, then with the 4-[4,2-H<sub>2</sub>N(HO<sub>3</sub>S)C<sub>6</sub>H<sub>3</sub>N: N] deriv. of VI to give an analogous dye.

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## 27. Direct diasazo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1959\)](#), CH 342316 19591231, Language: Unavailable, Database: CAPLUS

Diazotized 2-amino-5-nitrobenzoic acid was coupled with: 1-(5-sulfo-1-naphthyl)-; 1-(6-sulfo-2-naphthyl)-; 1-(4,8-disulfo-2-naphthyl)-; 1-(3,6-disulfo-1-naphthyl)-; 1-(4,8-disulfo-1-naphthyl)-; 1-(5,7-disulfo-2-naphthyl)-; 1-(6,8-disulfo-2-naphthyl)-; or 1-(7-sulfo-2-naphthyl)-3-methyl-5-pyrazolone. Redn. of the NO<sub>2</sub> group to the NH<sub>2</sub> group gave amino monoazo compds. which were then treated with fumaric acid dichloride. The new direct disazo dyes were orange yellow powders; coppered dyeings on cellulose fibers were yellowish orange.

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## 28. Direct diasazo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1959\)](#), CH 342315 19591231, Language: Unavailable, Database: CAPLUS

Diazotized 2-amino-5-nitrobenzoic acid was coupled with: 1-(5-sulfo-1-naphthyl)-; 1-(6-sulfo-2-naphthyl)-; 1-(4,8-disulfo-2-naphthyl)-; 1-(3,6-disulfo-1-naphthyl)-; 1-(4,8-disulfo-1-naphthyl)-; 1-(5,7-disulfo-2-naphthyl)-; 1-(6,8-disulfo-2-naphthyl)-; or 1-(7-sulfo-2-naphthyl)-3-methyl-5-pyrazolone. Redn. of the NO<sub>2</sub> group to the NH<sub>2</sub> group gave amino monoazo compds. which were then treated with fumaric acid dichloride. The new direct disazo dyes were orange yellow powders; coppered dyeings on cellulose fibers were yellowish orange.

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## 29. Direct diasazo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1959\), CH 342314 19591231](#), Language: Unavailable, Database: CAPLUS

Diazotized 2-amino-5-nitrobenzoic acid was coupled with: 1-(5-sulfo-1-naphthyl)-; 1-(6-sulfo-2-naphthyl)-; 1-(4,8-disulfo-2-naphthyl)-; 1-(3,6-disulfo-1-naphthyl)-; 1-(4,8-disulfo-1-naphthyl)-; 1-(5,7-disulfo-2-naphthyl)-; 1-(6,8-disulfo-2-naphthyl)-; or 1-(7-sulfo-2-naphthyl)-3-methyl-5-pyrazolone. Redn. of the NO<sub>2</sub> group to the NH<sub>2</sub> group gave amino monoazo compds. which were then treated with fumaric acid dichloride. The new direct disazo dyes were orange yellow powders; coppered dyeings on cellulose fibers were yellowish orange.

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## 30. Direct diasazo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1959\), CH 342313 19591231](#), Language: Unavailable, Database: CAPLUS

Diazotized 2-amino-5-nitrobenzoic acid was coupled with: 1-(5-sulfo-1-naphthyl)-; 1-(6-sulfo-2-naphthyl)-; 1-(4,8-disulfo-2-naphthyl)-; 1-(3,6-disulfo-1-naphthyl)-; 1-(4,8-disulfo-1-naphthyl)-; 1-(5,7-disulfo-2-naphthyl)-; 1-(6,8-disulfo-2-naphthyl)-; or 1-(7-sulfo-2-naphthyl)-3-methyl-5-pyrazolone. Redn. of the NO<sub>2</sub> group to the NH<sub>2</sub> group gave amino monoazo compds. which were then treated with fumaric acid dichloride. The new direct disazo dyes were orange yellow powders; coppered dyeings on cellulose fibers were yellowish orange.

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## 31. Direct diasazo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1959\), CH 342312 19591231](#), Language: Unavailable, Database: CAPLUS

Diazotized 2-amino-5-nitrobenzoic acid was coupled with: 1-(5-sulfo-1-naphthyl)-; 1-(6-sulfo-2-naphthyl)-; 1-(4,8-disulfo-2-naphthyl)-; 1-(3,6-disulfo-1-naphthyl)-; 1-(4,8-disulfo-1-naphthyl)-; 1-(5,7-disulfo-2-naphthyl)-; 1-(6,8-disulfo-2-naphthyl)-; or 1-(7-sulfo-2-naphthyl)-3-methyl-5-pyrazolone. Redn. of the NO<sub>2</sub> group to the NH<sub>2</sub> group gave amino monoazo compds. which were then treated with fumaric acid dichloride. The new direct disazo dyes were orange yellow powders; coppered dyeings on cellulose fibers were yellowish orange.

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## 32. Direct diasazo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1959\), CH 342311 19591231](#), Language: Unavailable, Database: CAPLUS

Diazotized 2-amino-5-nitrobenzoic acid was coupled with: 1-(5-sulfo-1-naphthyl)-; 1-(6-sulfo-2-naphthyl)-; 1-(4,8-disulfo-2-naphthyl)-; 1-(3,6-disulfo-1-naphthyl)-; 1-(4,8-disulfo-1-naphthyl)-; 1-(5,7-disulfo-2-naphthyl)-; 1-(6,8-disulfo-2-naphthyl)-; or 1-(7-sulfo-2-naphthyl)-3-methyl-5-pyrazolone. Redn. of the NO<sub>2</sub> group to the NH<sub>2</sub> group gave amino monoazo compds. which were then treated with fumaric acid dichloride. The new direct disazo dyes were orange yellow powders; coppered dyeings on cellulose fibers were yellowish orange.

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## 33. Direct diasazo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1959\), CH 342310 19591231](#), Language: Unavailable, Database: CAPLUS



Diazotized 2-amino-5-nitrobenzoic acid was coupled with: 1-(5-sulfo-1-naphthyl)-; 1-(6-sulfo-2-naphthyl)-; 1-(4,8-disulfo-2-naphthyl)-; 1-(3,6-disulfo-1-naphthyl)-; 1-(4,8-disulfo-1-naphthyl)-; 1-(5,7-disulfo-2-naphthyl)-; 1-(6,8-disulfo-2-naphthyl)-; or 1-(7-sulfo-2-naphthyl)-3-methyl-5-pyrazolone. Redn. of the NO<sub>2</sub> group to the NH<sub>2</sub> group gave amino monoazo compds. which were then treated with fumaric acid dichloride. The new direct disazo dyes were orange yellow powders; coppered dyeings on cellulose fibers were yellowish orange.

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### 34. Direct diasazo dyes

By Steinemann, Willy

From [No Corporate Source data available \(1959\), CH 342309 19591231](#), Language: Unavailable, Database: CAPLUS

Diazotized 2-amino-5-nitrobenzoic acid was coupled with: 1-(5-sulfo-1-naphthyl)-; 1-(6-sulfo-2-naphthyl)-; 1-(4,8-disulfo-2-naphthyl)-; 1-(3,6-disulfo-1-naphthyl)-; 1-(4,8-disulfo-1-naphthyl)-; 1-(5,7-disulfo-2-naphthyl)-; 1-(6,8-disulfo-2-naphthyl)-; or 1-(7-sulfo-2-naphthyl)-3-methyl-5-pyrazolone. Redn. of the NO<sub>2</sub> group to the NH<sub>2</sub> group gave amino monoazo compds. which were then treated with fumaric acid dichloride. The new direct disazo dyes were orange yellow powders; coppered dyeings on cellulose fibers were yellowish orange.

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### 35. Reactive fluorinated dyes for cotton

No Inventor data available

From [No Corporate Source data available \(1960\), GB 827570 19600210](#), Language: Unavailable, Database: CAPLUS

H<sub>2</sub>O-sol. azo dyes, prepd. by combining a diazo component contg. an SO<sub>2</sub>F group with a coupling component of the naphthalene or pyrazolone series, and applied to cotton fiber in the presence of acid binding substances, produces an acylation of the fiber with a splitting off of HF. All dyes of the azo, nitro, or anthraquinone series possess this property, if they contain at least one SO<sub>2</sub>F group and are H<sub>2</sub>O-sol. For example, 3-aminobenzenesulfonyl fluoride hydrochloride 17.5 kg. is stirred with H<sub>2</sub>O, and after addn. of 10 N HCl 20 l., is diazotized with NaNO<sub>2</sub> 69 kg. while cooling in ice. The diazo soln. is filtered and combined with a soln. of the Na salt of 1-(4-sulfophenyl)-5-pyrazolone-3-carboxylic acid 29 kg., buffering the mineral acid by addn. of a small amount of NaO<sub>2</sub>CH or NaOAc. The dye is pptd. by salting out, filtered, and dried, giving a H<sub>2</sub>O-sol. powder suitable for dyeing or printing of cotton. Such dyeings, if steamed in the presence of NaOAc or other acid binding agent, yield greenish yellow dyeings fast to wet processing and light. If a dye contains an SO<sub>3</sub>H group in the place of the SO<sub>2</sub>F group, the dyeing after steaming is not fixed and may be washed off by rinsing and soaping.

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### 36. Chlorotriazinyl azo dyes

By Fasciati, Alfred

From [No Corporate Source data available \(1959\), US 2891941 19590623](#), Language: Unavailable, Database: CAPLUS

4-Chloro-6-methoxy- and phenoxy-s-triazin-2-ylamino derivs. of sulfonated azo dyes give wash-fast dyeings on cellulosic fibers. Thus, a soln. of cyanuric chloride (I) 18.4 parts in MeOH 400 (by vol.) is cooled to 0°, treated with H<sub>2</sub>O 2 and finely powd. Na<sub>2</sub>CO<sub>3</sub> 9.3, stirred for 2 hrs. at 0-5° and for 2 hrs. at 20-5°, cooled to 5°, treated with a soln. of 2,4-(H<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>SO<sub>3</sub>H 18.8 (Na salt) in H<sub>2</sub>O 700 parts, then with 4N NaOAc 200 parts by vol., stirred for 3 hrs. at 30-5°, pptd. with HCl and 15% NaCl and filtered. The condensation product 31.5 is diazotized, neutralized with NaHCO<sub>3</sub> 15 and added to a soln. of 1,8,3,6-(BzNH)(HO)C<sub>10</sub>H<sub>4</sub>(SO<sub>3</sub>H)<sub>2</sub> 42.3 (alkali salt) in H<sub>2</sub>O 400 and anhyd. Na<sub>2</sub>CO<sub>3</sub> 15 parts at 0-2°. The blue-red dye is pptd. with KCl, filtered, washed with KCl soln., and dried at 70° in vacuo. Similarly, the product from 2,4-dichloro-6-phenoxy-s-triazine 24.1 and 2,5-(H<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>SO<sub>3</sub>H 18.4 is diazotized and coupled in AcOH soln. with 6,4,2-(H<sub>2</sub>N)(HO)C<sub>10</sub>H<sub>5</sub>SO<sub>3</sub>H 29.3 parts to give a bluish red dye. A yellow dye is prepd. by diazotizing 2,4,8-H<sub>2</sub>NC<sub>10</sub>H<sub>5</sub>(SO<sub>3</sub>H)<sub>2</sub> 30.3, coupling in AcOH soln. with 3-AcNHC<sub>6</sub>H<sub>3</sub>NH<sub>2</sub> 15, reacting cold with I 18.4 at pH 5.5-6 in the presence of 2N Na<sub>2</sub>CO<sub>3</sub> 50, then treating at room temp. with an aq. soln. of PhOH 9.4 parts and enough Na<sub>2</sub>CO<sub>3</sub> to maintain a pH of 8.5-9. A scarlet dye is prepd. by treating 3-(4-acetamido-2-sulfophenylazo)-4-hydroxy-7-(4,6-dichloro-s-triazin-2-ylamino)-2-naphthalenesulfonic acid 62.7 in H<sub>2</sub>O 2000 with PhOH 9.4 parts and sufficient aq. Na<sub>2</sub>CO<sub>3</sub> to maintain pH 8-9. Diazotized 4,3-(H<sub>2</sub>N)(HO<sub>2</sub>S)C<sub>6</sub>H<sub>3</sub>N:NC<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>H-4 is coupled with 7,4,2-(AcNH)(HO)C<sub>10</sub>H<sub>5</sub>SO<sub>3</sub>H, the acetyl group is saponified with NaOH and a soln. of the amino azo dye 60.7 in H<sub>2</sub>O 2000 is reacted with I 18.4 parts for 1 hour at 0-5°. The mixt. is neutralized with 10% Na<sub>2</sub>CO<sub>3</sub>, then treated with PhOH 9.4 parts and enough Na<sub>2</sub>CO<sub>3</sub> to maintain pH 8-8.5, yielding a red dye.

## ~1 Citing

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**37. Chlorotriazinyl azo dyes**

By Fasciati, Alfred

From [No Corporate Source data available \(1959\), US 2891940 19590623](#), Language: Unavailable, Database: CAPLUS

Fiber-reactive yellow dyes are prepd. of the general structure  $5,2-R(NaO_3S)C_6H_3N:NR'$  where R is a 4,6-dichloro-s-triazin-2-ylamino group and R' is a 1-(disulfo-2-naphthyl)-3-methyl-5-pyrazolone residue. Thus, 1-(4,8-disulfo-2-naphthyl)-3-methyl-5-pyrazolone 39.5 is suspended in  $H_2O$  400, neutralized to pH 7-7.5, treated with  $NaHCO_3$  15, cooled to 0-2°, and treated with a diazo suspension from 2,4-( $H_2N$ )-(R) $C_6H_3SO_3H$  33.6 parts, previously neutralized to pH 7-7.5 with  $NaHCO_3$ . The dye, pptd. with KCl, filtered, washed with NaCl soln., and dried at 30° in vacuo, is easily sol. in cold  $H_2O$  and dyes cellulose pure yellow tints from an alk. NaCl bath at 25-35°. A similar dye is prepd. by coupling diazotized 2,4-( $H_2N$ )(AcNH) $C_6H_3SO_3H$  with 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone, hydrolyzing the Ac group with acid, adding a soln. of the product 58.3 in  $H_2O$  2000 to a suspension of cyanuric chloride 18.4 parts cooled to 0-2°, then neutralizing with 10% aq.  $Na_2CO_3$ . The dyes are fixed to cotton or to paper pulp in an aq. alk. salt bath at room temp.

## ~0 Citings

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**38. Azo dyes**

By Gunst, Raymond

From [No Corporate Source data available \(1959\), US 2875192 19590224](#), Language: Unavailable, Database: CAPLUS

Triazine-contg. dyes of the structure I, in which A is the residue of a coupling component which may contain an azo link, Y is  $SO_3H$ , Y' is H, or vice versa, X is halogen, and Z represents the radical of dehydrothiitoluidinesulfonic acid bound to the C atom through its  $NH_2$  group, are suitable for dyeing and printing cellulosic materials of fibrous structure, such as linen, regenerated cellulose, and cotton. The dyes are applied by the pad dyeing process or by direct dyeing. The dyes give pure tints, are fast to light, and have excellent fastness to washing. Thus, 61.9 parts of the secondary condensation product (I) formed from dehydrothiitoluidinemonosulfonic acid 1 mole, 2,4-diaminobenzene-1-sulfonic acid 1 mole, and 1 mole cyanuric chloride are diazotized at 20°, and coupled with 32.3 parts 1-(2,5-dichloro-4-sulfophenyl)-3-methyl-5-pyrazolone in about 2 hrs. The dye (II), a yellow powder, dyes cotton by pad dyeing process or from an alk. soln. having a high concn. of salt, in pure greenish yellow tints. I 61.9 is diazotized and coupled with 1-benzamido-8-naphthol-3,6-disulfonic acid 42.3 in 2 hrs. to give a dark powder which dyes cotton bluish red tints from an alk. soln. II 2 is dissolved in boiling water 100, added to water 2900 at 20°,  $Na_3PO_4$  30, NaCl 60, and cotton 100 are entered, the temp. of the bath is raised to 80° over 45 min., and NaCl 60 parts added, the dyeing being continued for 30 min. at 90-5°. The fabric is rinsed and aftertreated for 15 min. with  $Na_2CO_3$  2 and soap 3 parts/l., rinsed, and dried. A strong yellow dyeing of very good fastness to washing and light is obtained.

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**39. Stabilization of acylacetylarylide coupling components against formaldehyde**

By Streck, Clemens

From [No Corporate Source data available \(1959\), US 2877083 19590310](#), Language: Unavailable, Database: CAPLUS

Addn. of o- or p-phenylphenols (I) protects azo dyes derived from acylacetylarylides against discoloration by  $HCHO$ . The latter may be liberated, e.g., during steaming of urea- $HCHO$  pigment resin compns. printed in combination with the above azo dyes. A typical formulation is as follows: 85 g. diazotized dianisidine (stabilized with methyltaurine), 50 g. 3-hydroxy-2-naphthanilide, 22 g. bis(acetoacetyl)-o-toluidide, 25 g. Na o-phenylphenolate, 30 g. 70% aq. dimethylethanolamine, 50 g.  $EtOCH_2CH_2OH$ , 120 g. caustic soda (40° B'e.), and 525 g. water. After thickening with starch-tragacanth, printing on cotton, drying, and exposing to acidified steam, a jet-black color is obtained, which is changed to a bluer black when 3 drops commercial  $HCHO$  are included in the formulation. In the absence of I, similar addn. of  $HCHO$  produces a much larger color change.

## ~0 Citings

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#### 40. Disazo dyes and their metal complex compounds

By Steinemann, Willy

From [No Corporate Source data available \(1959\)](#), US 2879265 19590324, Language: Unavailable, Database: CAPLUS

Metalized dyes are prepd. of the general formula  $R[4,2-(-NH)(HO_2C)C_6H_3N:NC:C(OH).N[(HO_3S)_n-2-C_{10}H_{7-n}].N:CMe]_2$ , where n is 1 or 2 and R is the radical of a substituted dibasic org. acid with  $\geq 1$  C:C groups, such as fumaric, muconic, or terephthalic acid. They are prepd. by treating 2 moles of the compd.  $4,2-H_2N(HO_2C)C_6H_3N:NC:C(OH).N[(HO_3S)_n-2-C_{10}H_{7-n}].N:CMe$  (I) or 1 mole I and 1 mole of an analogous compd. with 1 mole fumaric or similar acid, then metalizing. Thus, to 2.5%  $CuSO_4$  soln. 500, which contains excess  $NH_3$ , is added at 70-80° the amino azo compd. obtained from coupling 1 mole diazotized 1-amino-4-nitrobenzene-2-carboxylic acid (II) with 1 mole 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone (III), and reducing the  $NO_2$  group to  $NH_2$ . The salted out metal-contg. amino azo compd. is treated with a 20% soln. of fumaroyl chloride in PhCl for 3 hrs. to give a brown powder which dissolves in water yellow-brown, in concd.  $H_2SO_4$  yellow, and dyes cellulose fibers yellowish orange tints of good fastness. Diazotized II and 1-(6-sulfo-2-naphthyl)-3-methyl-5-pyrazolone (IV) give a yellowish orange dye; diazotized II and 1-(4,8-disulfo-2-naphthyl)-3-methyl-5-pyrazolone (V) give a similar dye. These dyes are metalized to their Co or Ni complexes. II, III, and benzene-1,4-dicarboxylic acid (VI) is metalized to a yellowish orange dye. Diazotized II and IV treated with VI give a product which is coppered to a yellow dye for cellulose and leather. Tetrazotized  $[4,3-H_2N(HO_2C)C_6H_3NHCOCH:]_2$  (VII), III, and 1-(6,8-disulfo-2-naphthyl)-3-methyl-5-pyrazolone is coppered to give an orange cellulose dye. Coupling of V and IV gives a similar dye.

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#### 41. Chromium-containing azo dyes

By Maderni, Piero; Wehrli, Walter

From [No Corporate Source data available \(1957\)](#), DE 1009335 19570529, Language: Unavailable, Database: CAPLUS

See Brit. 741,635 (C.A. 50, 10417i).

~0 Citings

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#### 42. Chromium-containing monoazo dyes of the pyrazolone series

By Kuster, Werner; Schetty, Guido

From [No Corporate Source data available \(1957\)](#), DE 957507 19570207, Language: Unavailable, Database: CAPLUS

See Brit. 762,905 (C.A. 51, 15140i).

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#### 43. Copperized direct dyes

By Weber, Oskar; Anderau, Walter; Gunst, Raymond; Ruetimeyer, Bernhard

From [No Corporate Source data available \(1958\)](#), US 2824865 19580225, Language: Unavailable, Database: CAPLUS



Disazo and polyazo dyes prep'd. from 6(or 7)-sulfomethylamino-1-naphthol-3-sulfonic acids and diazotized amino azo compds. contg. complex-forming groups ortho to the diazo group can be copperized to give direct dyes fast to resin-aftertreatment. Alternatively, the corresponding aminonaphtholsulfonic acids can be used as coupling components and the sulfomethyl groups introduced later by treatment with  $\text{HCHONaHSO}_3$ . Thus, [4,3-( $\text{H}_2\text{N}$ )( $\text{HO}$ ) $\text{C}_6\text{H}_3$ ] $_2$  (I) 21.6 is tetrazotized, neutralized, and added at 5-10° to a mixt. of 6-sulfomethylamino-1-naphthol-3-sulfonic acid (II) 66.6, anhyd.  $\text{Na}_2\text{CO}_3$  80,  $\text{C}_5\text{H}_5\text{N}$  100, and water 800 parts, followed by a soln. of  $\text{CuSO}_4$  50 in concd.  $\text{NH}_4\text{OH}$  200. The Cu compd. (III) of the disazo dyes, filtered after a few hrs., is a dark powder which dissolves blue-green in concd.  $\text{H}_2\text{SO}_4$  and dyes cotton blue. III can also be prep'd. by using dianisidine (IV) in place of I and copperizing for 10 hrs. at 80-85°. III is also prep'd. by coupling tetrazotized I with 6-amino-1-naphthol-3-sulfonic acid (V) 47.8 in the presence of  $\text{Ca}(\text{OH})_2$  and  $\text{C}_5\text{H}_5\text{N}$ , distilling off the  $\text{C}_5\text{H}_5\text{N}$ , pptg. the dye with 30%  $\text{HCl}$ , filtering, neutralizing the paste with concd.  $\text{NaOH}$ , heating 2 hrs. at 85° with an aq. soln. of  $\text{HCHO}$  6 and  $\text{NaHSO}_3$  20.8, cooling to 40°, adding concd.  $\text{NH}_4\text{OH}$  60 and  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  50, stirring 1 hr. at 40°, and filtering. The Ni complex dyes cotton a more reddish blue. The Cu complex of the disazo dye obtained by replacing II with 7-sulfomethylamino-1-naphthol-3-sulfonic acid (VI) is a gray dye. By coupling tetrazotized I 21.6 with V 23.9 and then II 33.3 a dye is prep'd. with properties similar to III; replacement of V by 2-naphthol-3,6-disulfonic acid gives a reddish blue dye. Similarly, tetrazotized IV 24.2 coupled with VI 33.3 and then with 1-(5,7-disulfo-2-naphthyl)-3-methyl-5-pyrazolone 29 is aftercoppered to a dark powder, gray-violet in water, bluish gray on cotton. The coupling product from diazotized 2-(4-aminophenyl)-6-methylbenzothiazolesulfonic acid 32 and 2-MeOC $_6\text{H}_4\text{NHCH}_2\text{SO}_3\text{H}$  21.7 is hydrolyzed by heating for 1 hr. at 90° with dil.  $\text{NaOH}$ , diazotized at 45° by the inverse procedure, coupled with VI 33.3 in the presence of some  $\text{C}_5\text{H}_5\text{N}$ , and aftercoppered at 95° to yield a greenish gray dye. The coupling product from diazotized 2,4-(MeO)( $\text{O}_2\text{N}$ ) $\text{C}_6\text{H}_3\text{NH}_2$  16.8 and II 35 is heated with dextrose in aq.  $\text{NaOH}$  at 65°, then aftercoppered to a gray dye. Similarly, the dark-brown coupling product from diazotized 2,5-( $\text{H}_2\text{N}$ )( $\text{O}_2\text{N}$ ) $\text{C}_6\text{H}_3\text{CO}_2\text{H}$  and VI is reduced to a violet-gray dye which can be aftercoppered to a neutral gray. The disazo compd. from diazotized [4,3-( $\text{H}_2\text{N}$ )( $\text{HO}_2\text{CCH}_2\text{O}$ ) $\text{C}_6\text{H}_3$ ] $_2$  and VI is a blue dye which can be aftercoppered to a bluish gray.

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#### 44. Copper containing trisazo dyes

No Inventor data available

From [No Corporate Source data available \(1957\)](#), GB 787416 19571211, Language: Unavailable, Database: CAPLUS

Treating trisazo dyes (I) of the general formula BACD, in which A means the residue of a tetrazo compd. of the biphenyl (II) or the BzNHPh series, B is the o-HOC $_6\text{H}_3\text{COOH}$  (III) radical, C is the radical of an alkoxynaphthylaminomonosulfonic acid, and D is the radical of a 1-amino-8-naphtholdisulfonic acid, with a Cu-yielding agent, and heating the slightly sol. or insol. Cu complex contg. 2 Cu atoms per mol. with a complex forming aliphatic amine or an aminocarboxylic acid in an acid medium produces a sol. I-Cu complex contg. 1 Cu atom per mol. The I 50 in which A is tetrazotized p-H $_2\text{NC}_6\text{H}_4\text{CONHC}_6\text{H}_4\text{NH}_2$ -p, B is III, coupled in para position to the OH group, C is the diazotized 2-ethoxy-1-naphthylamine-6-sulfonic acid (IV) radical, coupled in 4-position to A, and D is the 1-acetamido-8-naphthol-3,6-disulfonic acid radical, coupled in 7-position to D, is dissolved in water 150 and heated for 6 hrs. to 110-25° with cryst.  $\text{CuSO}_4$  12.5 parts. The black suspension is heated with glacial  $\text{AcOH}$  10 to 80°, the pptd. Cu lake is filtered, stirred into  $\text{H}_2\text{O}$  750, and treated with an  $\text{AcOH}$  soln. of  $[\text{CH}_2\text{N}(\text{CH}_2\text{CO}_2\text{Na})_2]_2$  18 parts in water at 80° until completely dissolved. The isolated dye produces olive dyeings fast to light which may be aftercoppered. Another I (V), in which A is tetrazotized II, B is III, coupled in para position to the OH group, C is diazotized IV, coupled in 4-position to A, and D is 1-amino-8-naphthol-2,4-disulfonic acid, also produces an olive cotton dye (VI) after the same treatment. V 91.3 in water 300 is heated with 40%  $\text{NaOH}$  25 to 90° and treated for 6 hrs. with  $\text{CuSO}_4$  26 and Na K tartrate 70 in. 5%  $\text{NaOH}$  160 parts at 102°. The color lake is isolated and converted with  $[(\text{CH}_2\text{N}(\text{CH}_2\text{CO}_2\text{H})_2)_2]$  into VI.

#### ~0 Citings

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